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(54) **METHOD AND APPARATUS FOR SPAN AND SUBSPAN SORTING RENDERING SYSTEM**

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(58) Field of Search **345/418, 419, 345/441, 442, 443, 118, 433**

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(57) **ABSTRACT**

A data shifting capability that permits sorting the data in addition to searching for obtaining real-time performance in color, with high quality imagery through a simple search of a spacial database based on a rectangularly shaped search region or range search. A sorting Magnitude Comparison Content Addressable Memory (SMCCAM) performs a range search, introducing a conservative approximation of the idea Occluding Region, and provides a MCCAM wherein the data words stored in the fields are shifted to corresponding fields in an adjacent word, based on the magnitude comparisons. The 3D graphics method stores the parameters of a polygon span in a spatial database and a query operation is performed on the database to determine which of those spans, or portions of spans, are visible, and applies a rule for comparing a new span portion to an old span portion on a subspan-by-subspan basis, thereby providing additional polygon edge information within a raster line, providing anti-aliasing.

2 Claims, 65 Drawing Sheets

Span Sorting Renderer Architecture

